



Virginia Commonwealth University
Coastal Management GIS Support & Coastal GEMS

Maintenance: FY19 Annual Report

9 – September 30th 2020



Virginia Co
M A N A G E M E N T



Acknowledgements

This report was prepared by the Virginia Coastal Zone Management Program's Coastal GIS Coordinator. The Coastal GIS Coordinator position is provided through a contract with Virginia Commonwealth University and is funded by the Virginia Coastal Zone Management Program at the Virginia Department of Environmental Quality through Grant #NA19NOS4190163 from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, under the Coastal Zone Management Act of 1972, as amended.

Introduction

This report provides a summary of tasks performed and products created under task #1.04 by the Virginia Coastal Zone Management Program's Coastal GIS Coordinator and by staff of Virginia Commonwealth University's Center for Environmental Studies during the grant year FY2019 (October 1st 2019 – September 30th 2020). For full-resolution map images, spatial data, or further documentation of tasks summarized in this report, contact nick.meade@deq.virginia.gov.

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Coastal GEMS Mapping Application

Hosting and Maintenance

Virginia Commonwealth University's Center for Environmental Studies (VCU CES) continued to host the Coastal GEMS online mapping application through the FY19 grant period and VCU CES staff performed routine maintenance and updates on Coastal GEMS during this time.

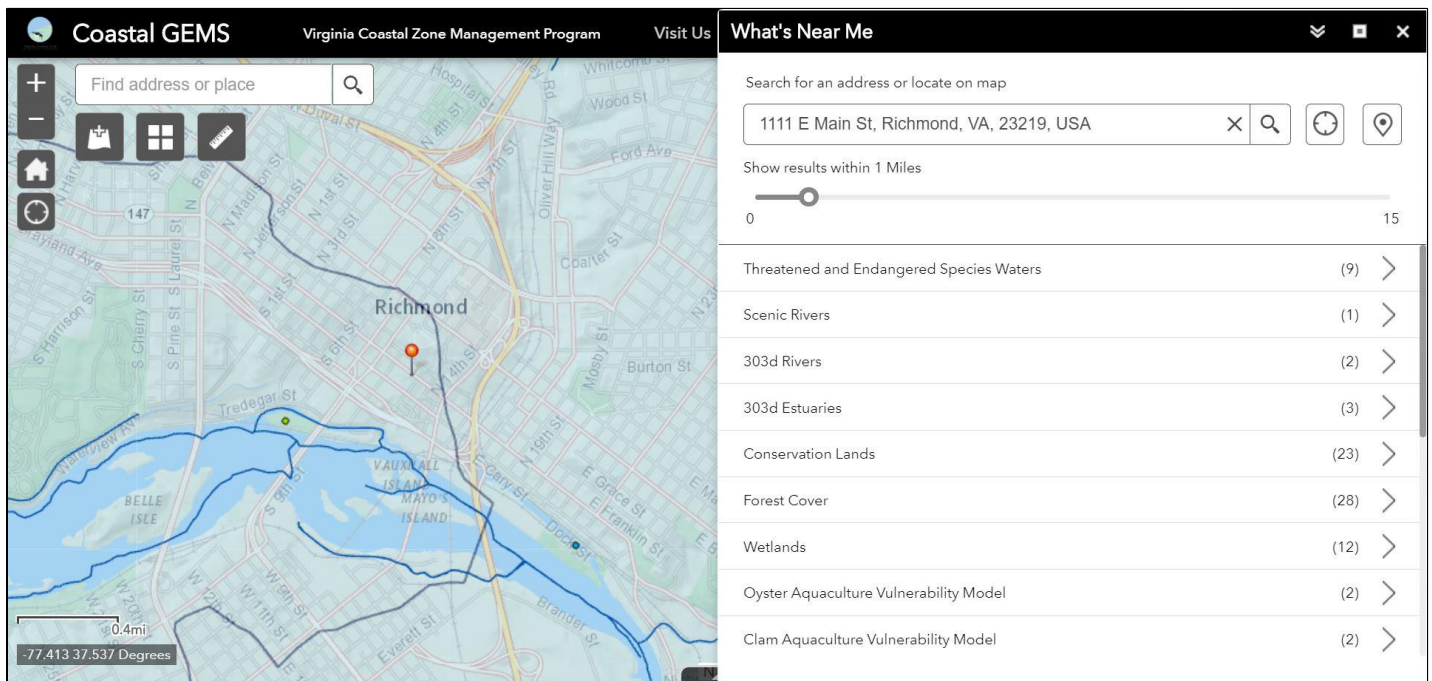
Tasks included refreshing map services, updating data and cartography in the map file as per CZM staff request, and installing software and security upgrades. Coastal GEMS remained operational throughout the FY19 grant period and was only offline to install software/security updates or to refresh map services. Coastal GEMS can be accessed at: www.coastalgems.org.

Google Analytics Tracking

Google Analytics services for Coastal GEMS set up by VCU CES staff remained operational throughout the FY19 grant period. VCU CES staff created Google Analytics reports at CZM staff request by querying specific date ranges. From October 1, 2019 to September 30, 2020, Coastal GEMS logged 777 visits, resulting in 1,033 sessions with an average site visit time of 1 minute and 5 seconds. More Google Analytics information for the Coastal GEMS mapping application during the FY19 grant period can be found in the appendix of this report.

Coastal GEMS v4

VCU staff and the Coastal GIS Coordinator worked to complete the new Coastal GEMS version 4 landing page and mapping application. These products are set to be completed by November 30 under the FY20 grant. The new draft landing page can currently be accessed at https://gaia.vcu.edu/gems_redo/ and the new draft web mapping application can currently be accessed at <https://gaia.vcu.edu/GemsMap/>.



Above: A screenshot the “What’s Near Me?” function on the Coastal GEMS v4 mapping application which allows users to perform a spatial query of all GEMS data features within a defined radius of a specific location.

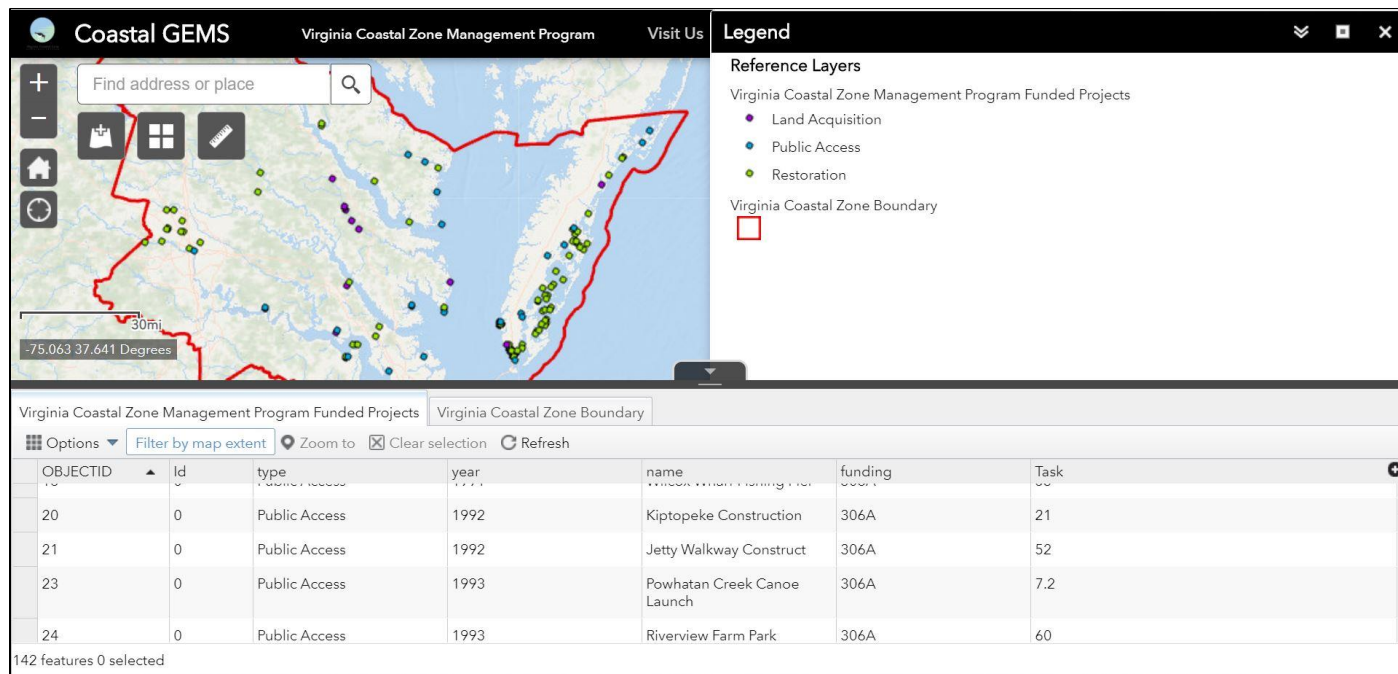
Coastal GEMS Data Management

The Coastal GIS Coordinator requested and obtained available data updates for current Coastal GEMS mapping application and story map layers from data providers, processed/prepared data for display, packaged symbolized data and uploaded to VCU CES to update map services. Coastal GEMS fact sheets were updated as necessary. The Coastal GIS Coordinator worked with Virginia CZM and MARCO partners to create new story maps. Coastal GEMS can be accessed at: www.coastalgems.org.

Coastal GEMS Data Management Continued:

Coastal GEMS Layers updated during the FY19 grant period: Oyster Gardening Sites, Private Oyster Leases, Conserved Lands, Condemned Shellfish Areas, and Submerged Aquatic Vegetation Coverage

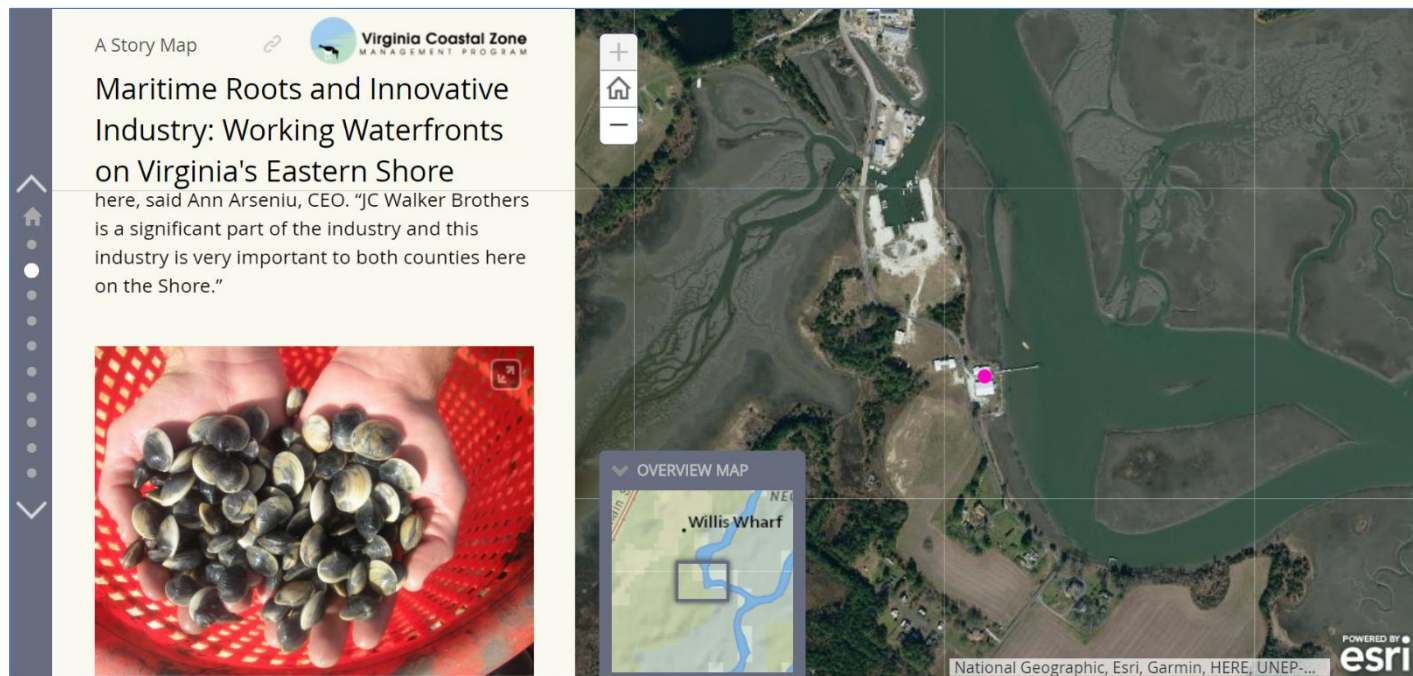
Layers added during the FY19 grant period: Virginia Coastal Zone Boundary and Virginia CZM Funded Projects

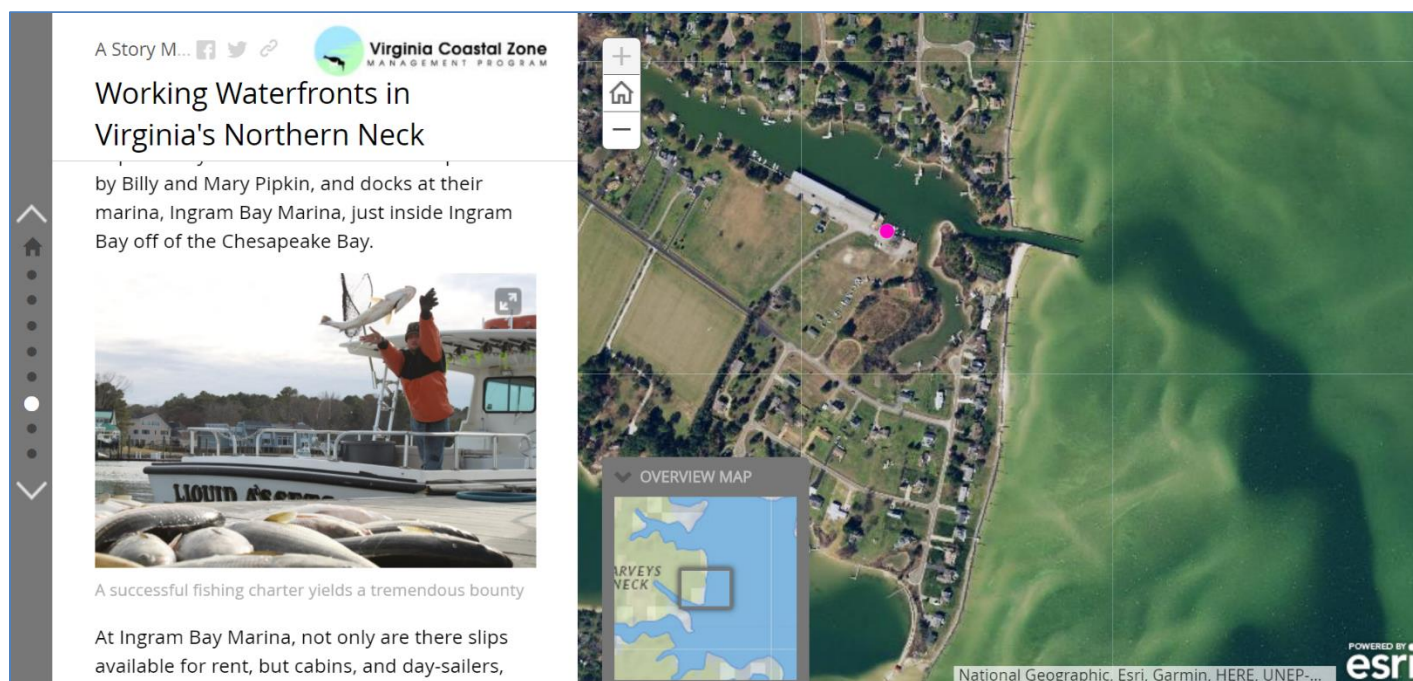
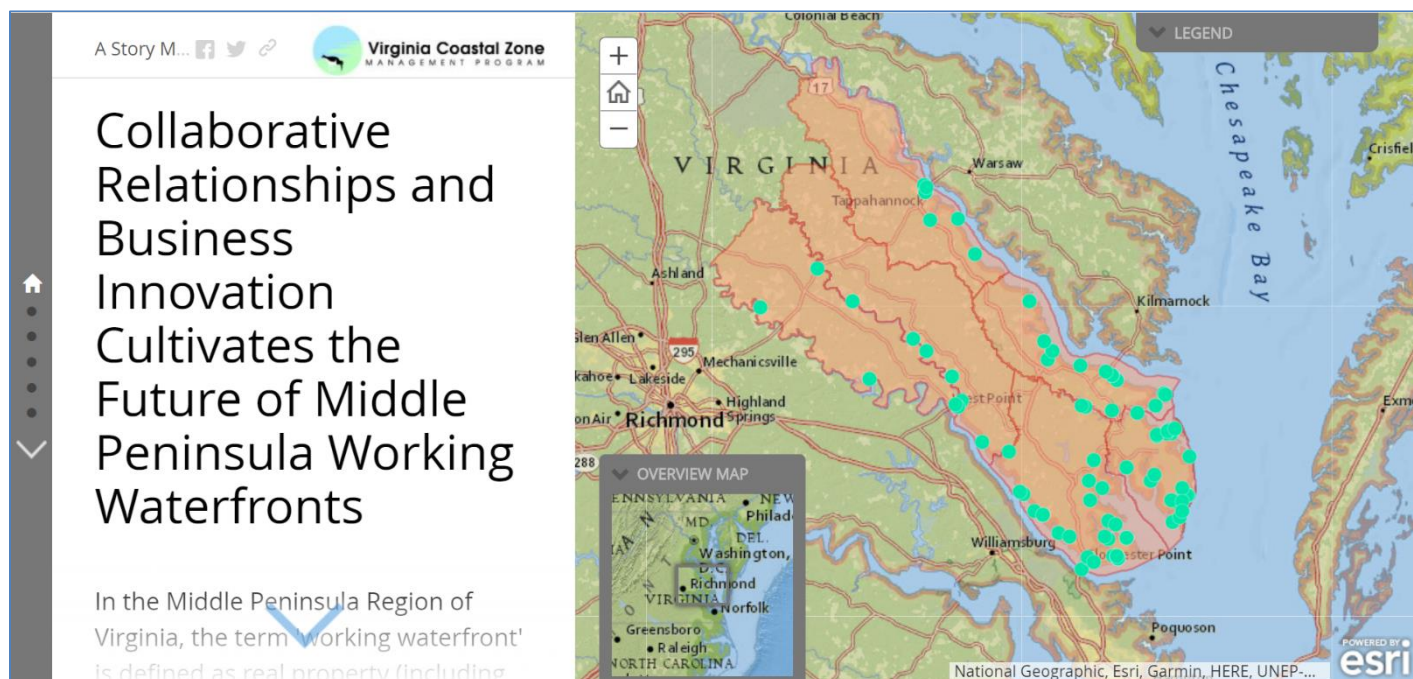


Above: A screenshot the Coastal GEMS v4 mapping application showing the new Virginia Coastal Zone Boundary and Virginia CZM Funded Projects layers

Story Maps

Story Maps created during the FY19 grant period: Story maps highlighting working waterfronts on the Eastern Shore: <https://arcg.is/1q1iLH>, Middle Peninsula: <https://arcg.is/1XrqmP>, and Northern Neck: <https://arcg.is/0KCqXT>, and a story map highlighting a study exploring deep-sea corals in Mid-Atlantic canyons: <https://arcg.is/1DTzyS>. Began work on story map highlighting major canyons of the Mid-Atlantic (Hudson, Baltimore, and Norfolk)

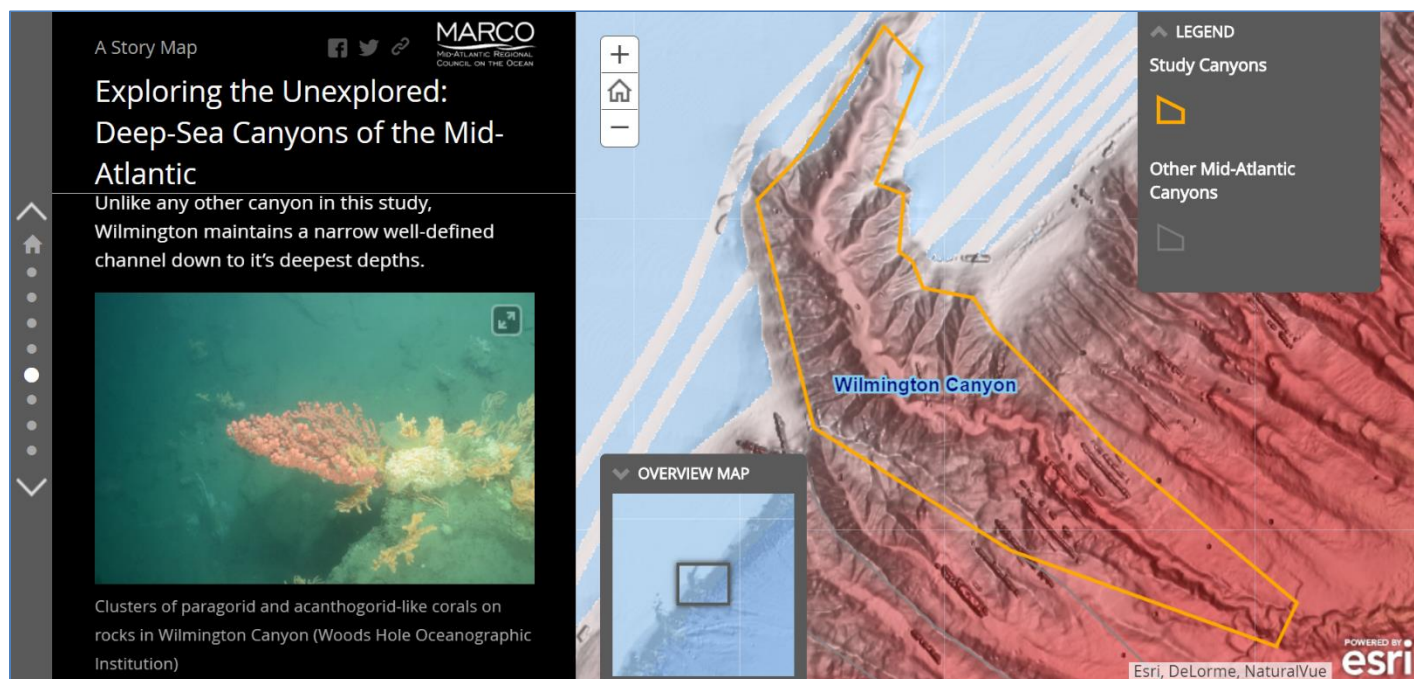




Above: Screenshots of story maps highlighting working waterfronts on the Eastern Shore, Middle Peninsula, and Northern Neck.

Below: Screenshot of story map highlighting a study exploring deep-sea corals in Mid-Atlantic canyons

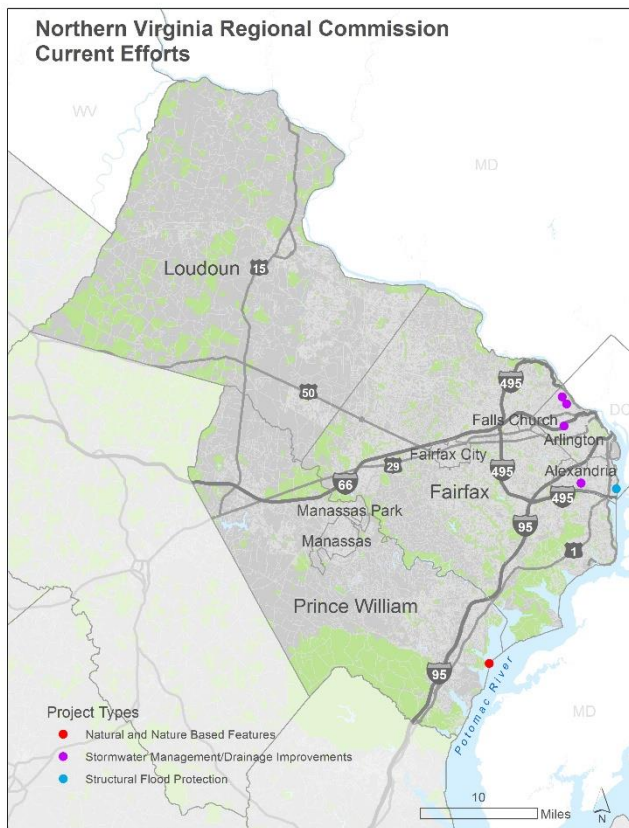
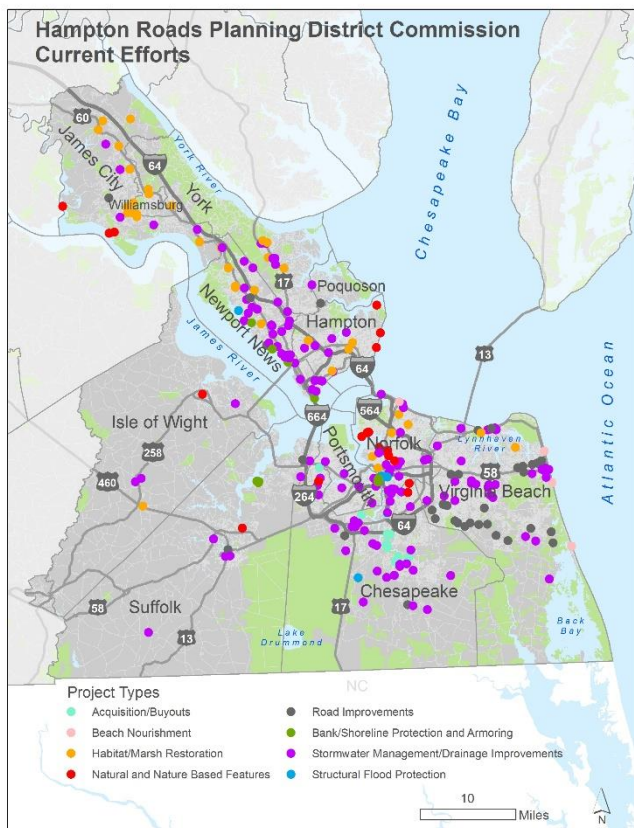
Story Maps Continued:



Coastal GIS Coordination

Coastal Resilience Master Plan Maps

In FY19, the Coastal GIS Coordinator Worked with Virginia Office of the Governor Coastal Adaptation staff to create current resilience project maps of the eight coastal PDC's, a PDC overview map, and a Coastal VEVA map for inclusion in the Coastal Resilience Master Plan.



Above: Current resilience project maps for HRPDC and NVRC created for inclusion in the Coastal Resilience Master Plan. Contact nick.meade@deq.virginia.gov for other PDC project maps.

Data Requests

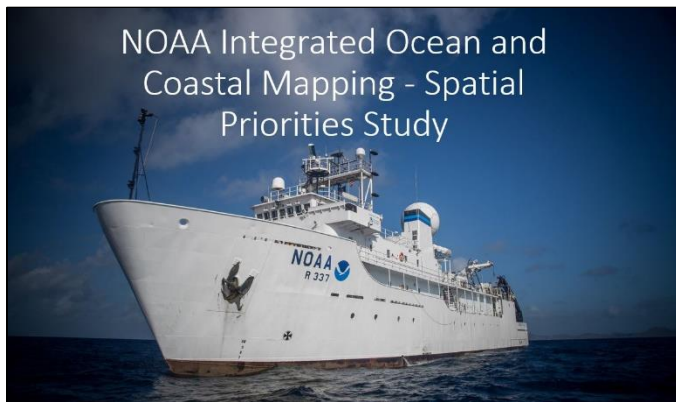
The Coastal GIS Coordinator responded promptly to all data and information inquiries in FY19, including requests from PDC's, consulting firms, state and federal agencies, and academic institutions.

Project Management

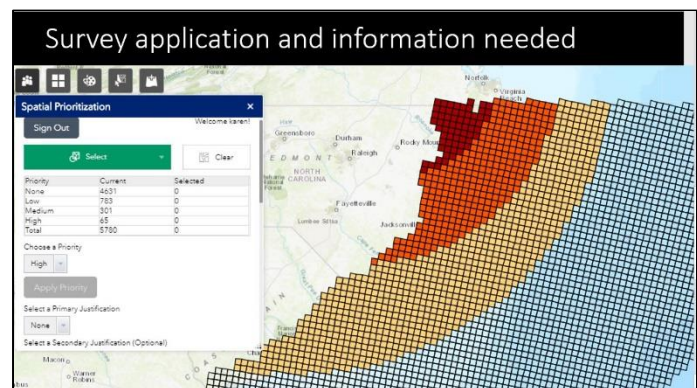
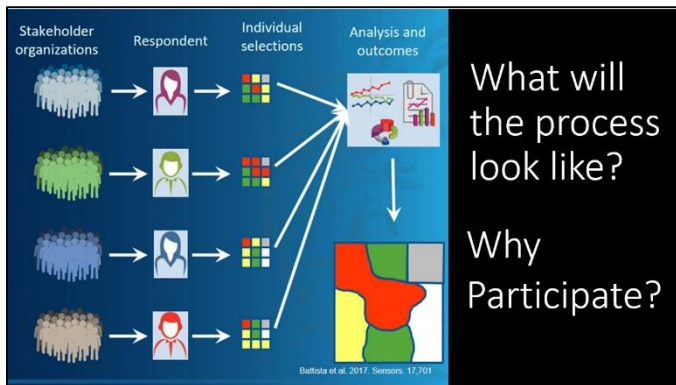
The Coastal GIS Coordinator performed VA CZM project manager duties in FY19 associated with Task 10 (Coastal Zone Natural Landscape Assessment High-Resolution Update) and Task 1.04 (Coastal Management GIS Support and Coastal GEMS Maintenance).

Ocean Mapping

The Coastal GIS Coordinator continued participation on the MARCO Ocean Mapping & Data Team (OMDT) and the MACO Non-Consumptive Recreation Work Group throughout FY19, coordinated NOAA Integrated Ocean and Coastal Mapping (IOCM) staff and state reps from the MARCO OMDT to begin a process to identify priority areas for mapping in the Mid-Atlantic region, and drafted text describing a participatory GIS workshop process (including info on pre-workshop prep and post workshop data processing) for MARCO staff to incorporate into a MARACOOS recreational fishing project proposal.



Left and Below: Slides created to explain NOAA IOCM Spatial Priorities Study process to VA stakeholders during VA CZM Coastal Policy Team meeting

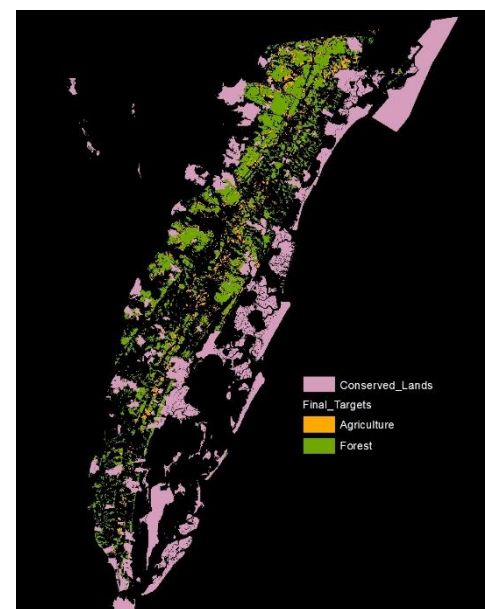


Training and Outreach

Eastern Shore Conservation Targeting

In FY19, the Coastal GIS Coordinator presented the Eastern Shore Conservation Targeting methodology and data at a DCR/Natural Heritage all-staff meeting (Nov 4) and a Virginia Eastern Shore Conservation Alliance meeting (Jan 29) and worked with TNC staff to incorporate deciduous/evergreen classification for forests, created by TNC, into Eastern Shore Conservation Targets dataset.

Right: Eastern Shore Conservation Targeting final data output. Contact nick.meade@deq.virginia.gov for data and full methodology document



Training and Outreach Continued:

CZM Meeting Technical Assistance

The Coastal GIS Coordinator continued to provide technical assistance for VA CZM meetings in FY19 including compiling presentations, setting up GoToMeeting webinars, and running polls during virtual CPT meeting.

CZM Magazine

In FY19 the GIS Coordinator wrote an article for the VA CZM magazine highlighting Coastal GEMS story maps.



Above: VA CZM magazine highlighting Coastal GEMS story maps

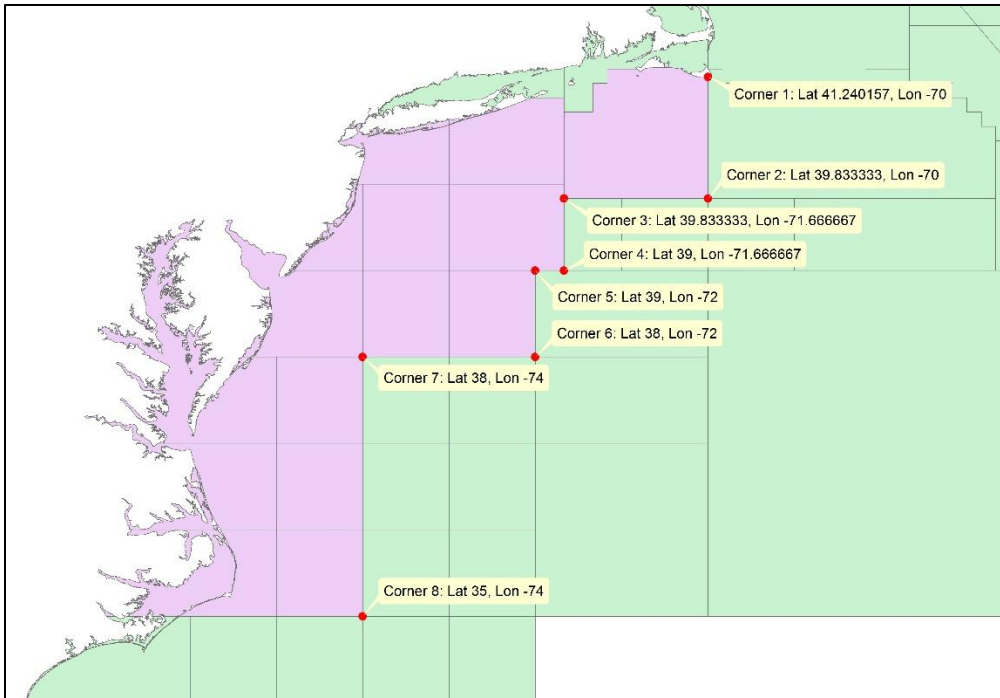
GIS Map Products and Services

CZM Partner Request

The Coastal GIS Coordinator continued to provide technical support to VA CZM partners in FY19, including:

- Creating a map, narrative coordinate description, and area calculations of NMFS statistical areas for VCU staff working to define the VA CZM GLD boundary (FY19 Task 94.01)
- Creating transparent background coastal zone and working waterfront regions map layouts for inclusion in a video highlighting rural working waterfronts created using VA CZM funds (FY18 Task 93.05) under contract with Northern Neck PDC.
- Creating a static map layout and ArcGIS Online web map of historic sites within Chippokes Plantation State Park for VA DHR and DCR staff working under a VA CZM grant (FY18 Task 73.01) to utilize in identifying sites for future interpretive signage

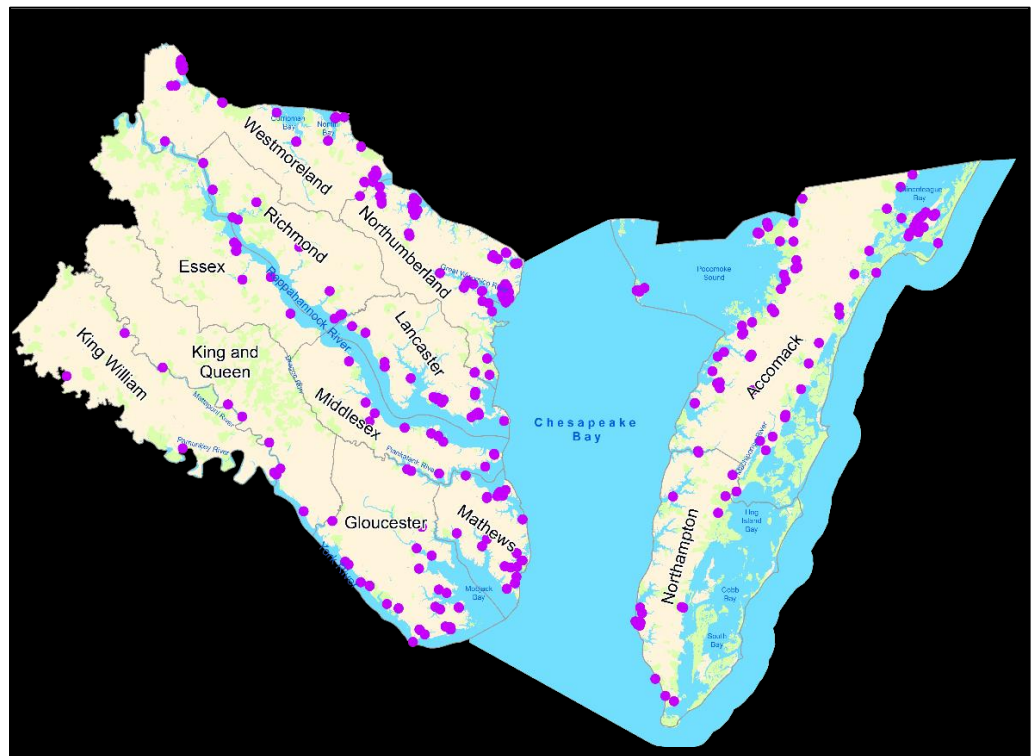
CZM Partner Request Continued:



Left: Map of VA CZM GLD Easternmost boundary. Narrative coordinate description of boundary:

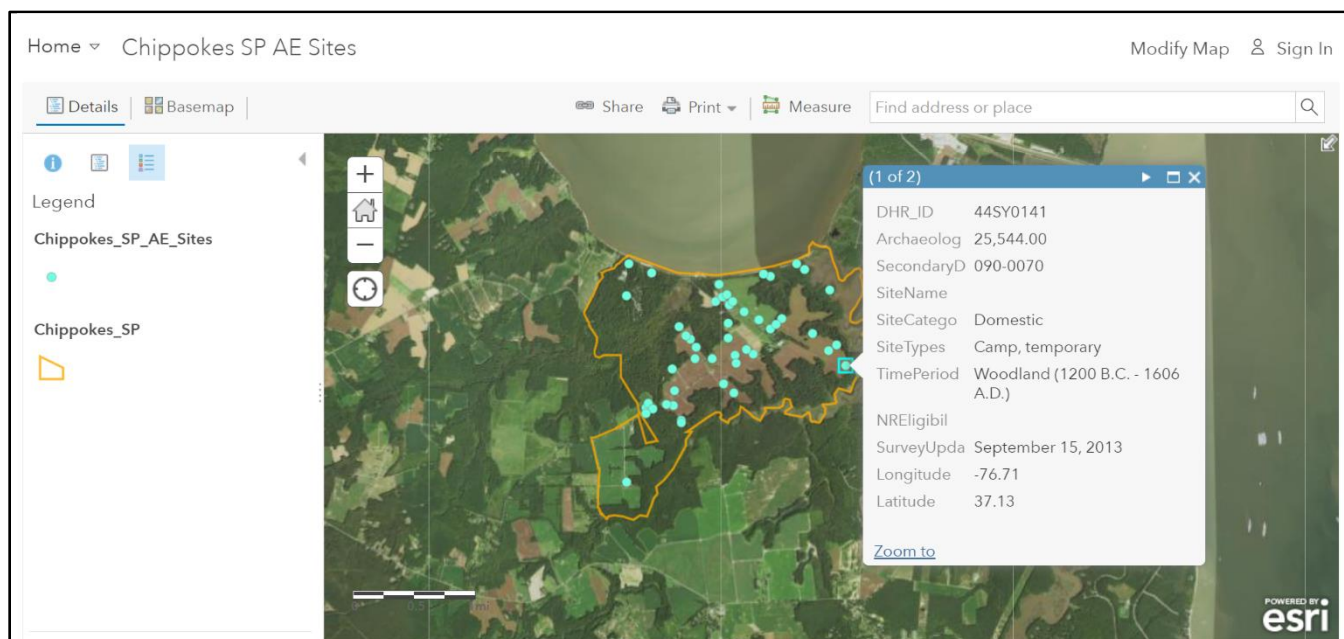
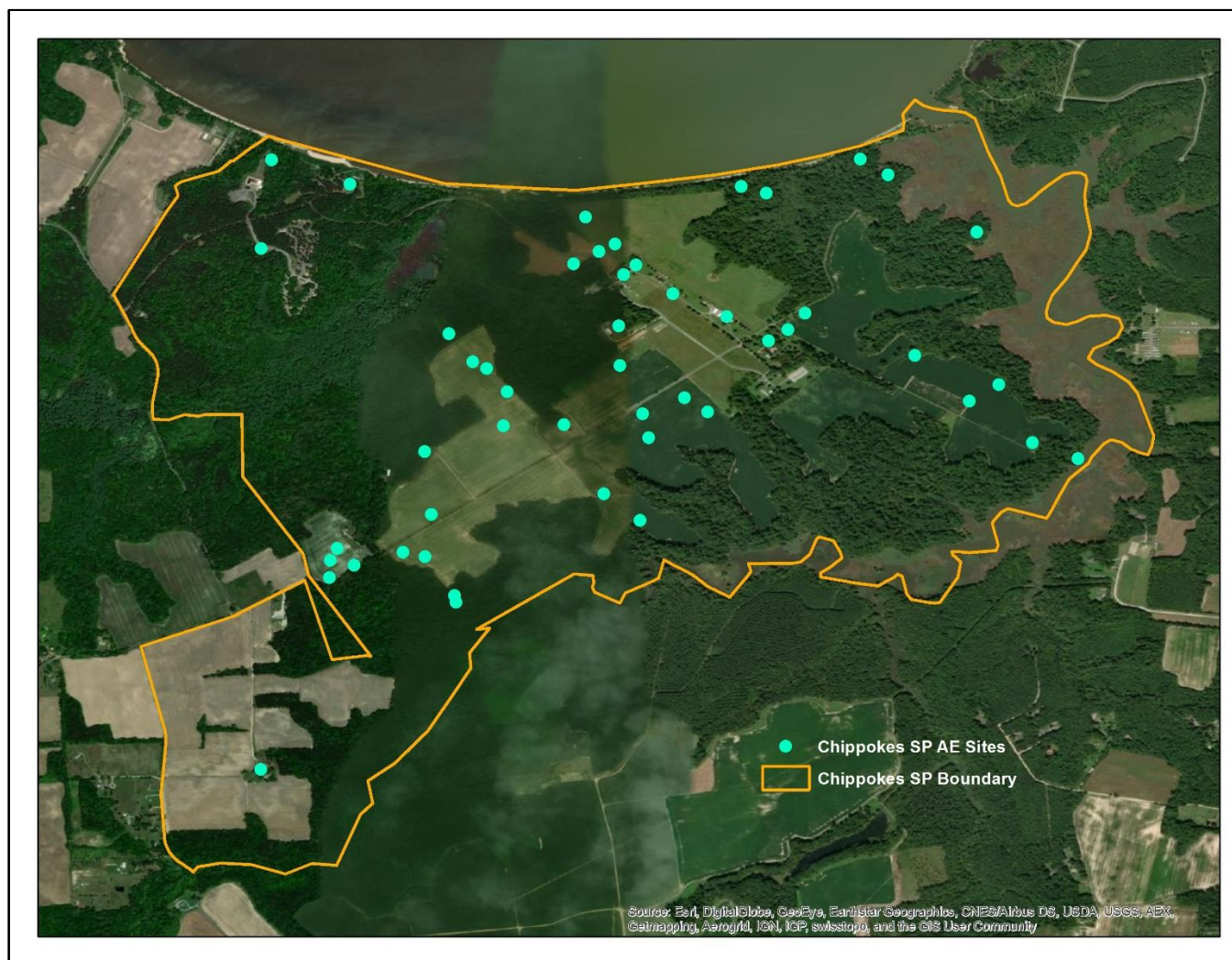
"The Easternmost border line of the GLD can be described as points from North to South, beginning at Corner 1, located at Latitude 41.240157 and Longitude -70; thence South to Corner 2, located at Latitude 39.833333 and Longitude -70; thence West to Corner 3, located at Latitude 39.833333 and Longitude -71.666667; thence South to Corner 4, located at Latitude 39 and Longitude -71.666667; thence West to Corner 5, located at Latitude 39 and Longitude -72; thence South to Corner 6, located at Latitude 38 and Longitude -72; thence West to Corner 7, located at Latitude 38 and Longitude -74; thence South to Corner 8, located at Latitude 35 and Longitude -74."

Right: transparent background working waterfront region map layout created for inclusion in a video highlighting rural working waterfronts



CZM Partner Request Continued:

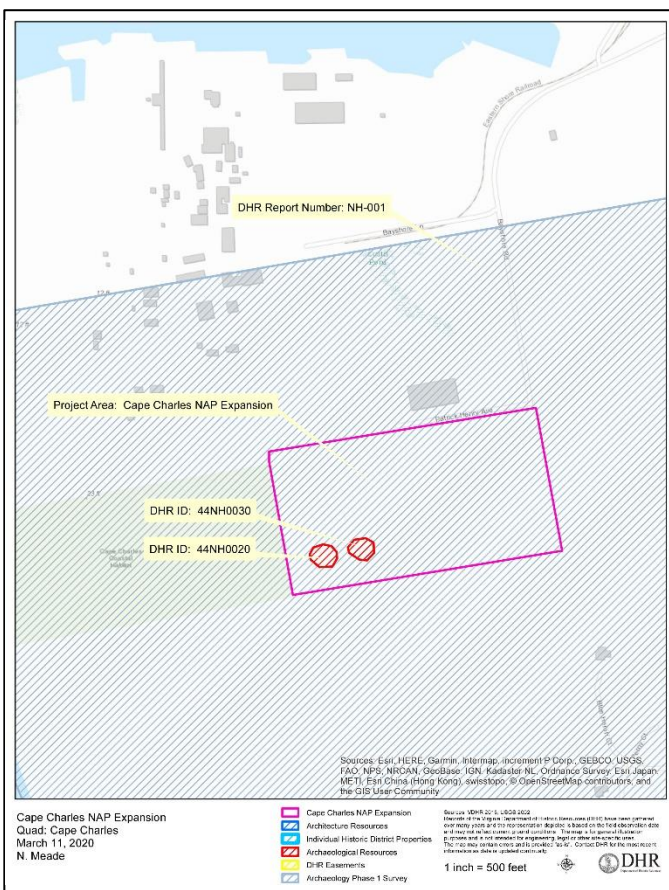
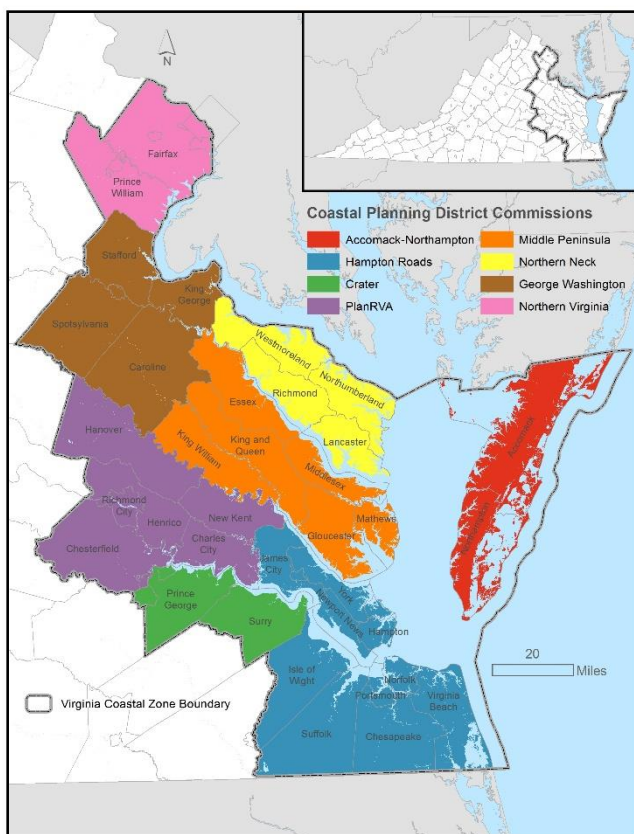
Below: static map layout and ArcGIS Online web map of historic sites within Chippokes Plantation State Park for VA DHR and DCR staff working under a VA CZM grant to utilize in identifying sites for future interpretive signage



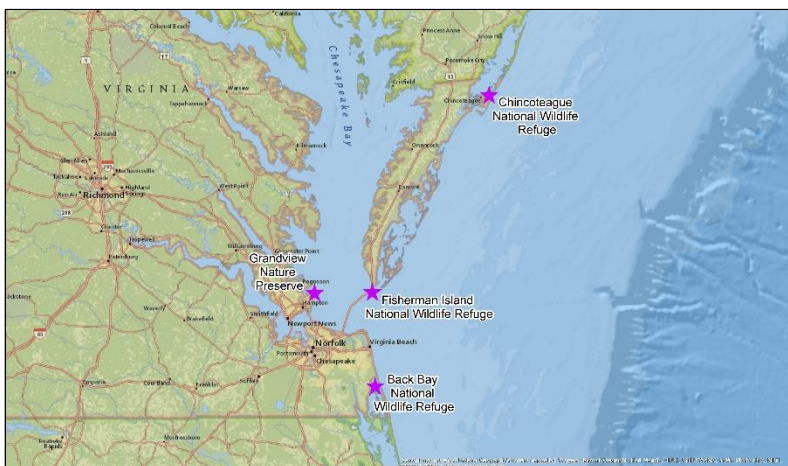
CZM Program Support

The Coastal GIS Coordinator continued to provide technical support to VA CZM staff in FY19, including:

- Creating a map layout showing native plant campaign boundaries overlaid on physiographic provinces to provide to new campaigns for upcoming presentations, to update the PlantVirginiaNatives website and to use in the VA CZM magazine. Available at: www.plantvirginiannatives.org/virginia-regional-native-plant-campaigns-guides
- Creating an updated Coastal PDC map, completing VA DHR archives search maps and SHPO review application for Cape Charles NAP expansion project, and creating additional map layouts and high-res screenshots for VA CZM exhibits and publications.
- Creating a detailed large scale printed map of the lower Chickahominy watershed used to pinpoint and record locations of interest to the Tribes at a meeting with the Chickahominy and E. Branch Chickahominy Tribes and the Lower Chickahominy River project team (including UVA, William & Mary Coastal Policy Clinic, and PlanRVA staff working under a VA CZM grant (FY19 Task 93)



Clockwise from Top Left: An updated Coastal PDC map, a VA DHR archives search map for the Cape Charles NAP expansion project, and a map for the Virginia CZM Magazine showing the location of four isolated beaches monitored monthly for marine debris



CZM Program Support Continued:



Left:

A detailed large scale printed map of the lower Chickahominy watershed used to pinpoint and record locations of interest to the Chickahominy and E. Branch Chickahominy Tribe

Appendix

Google Analytics

